

WHAT IS CLAIMED IS:

1. A method for screening for or diagnosing a growth-promoting state in a non-pregnant patient, said method comprising:
 - a) detecting a level of pregnancy-associated plasma protein-A (PAPP-A) in a biological sample from said non-pregnant patient; and
 - b) comparing said level of PAPP-A in said non-pregnant patient to a standard level of PAPP-A in non-pregnant patients, wherein an increase in said level of PAPP-A in said non-pregnant patient indicates the presence of said growth-promoting state.
2. The method of claim 1, wherein said growth-promoting state is restenosis, atherosclerosis, ovulation, wound healing, fibrosis, or cancer.
3. The method of claim 1, wherein said level of PAPP-A is measured as protease activity.
4. The method of claim 1, wherein said level is measured as amount of PAPP-A protein.
5. The method of claim 1, wherein said level is measured as amount of PAPP-A messenger RNA.
6. The method of claim 4, wherein said amount of PAPP-A protein is detected immunologically.
7. The method of claim 6, wherein said amount of PAPP-A protein is detected by at least one monoclonal antibody.
8. The method of claim 1, wherein said biological sample is selected from the group consisting of blood, urine, pleural fluid, oral washings, tissue biopsies, and follicular fluid.
9. The method of claim 1, wherein said biological sample is blood.
10. The method of claim 1, wherein said PAPP-A is detected in a PAPP-A complex with at least one other protein.
11. The method of claim 1, wherein said PAPP-A is detected as a dimer of PAPP-A.

12. The method of claim 1, wherein said PAPP-A is detected as a monomer of PAPP-A.

13. A monoclonal antibody having specific binding affinity for PAPP-A, wherein PAPP-A is free of proMBP.

14. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an agent that alters the protease activity of PAPP-A.

15. A method for identifying an agent inhibiting the protease activity of PAPP-A, said method comprising incubating an isolated PAPP-A polypeptide, an activator of protease activity, and a substrate of PAPP-A with said agent to determine if proteolysis of said substrate is inhibited.

16. The method of claim 15, wherein said substrate is IGFBP-4 or a fragment thereof.

17. The method of claim 15, wherein said activator of protease activity is insulin-like growth factor I or insulin-like growth factor II.

18. A method for identifying an agent enhancing the protease activity of PAPP-A, said method comprising incubating an isolated PAPP-A polypeptide and a substrate of PAPP-A with said agent to determine if proteolysis of said substrate is enhanced.

19. The method of claim 18, wherein said agent is a fragment of an insulin-like growth factor.

20. The method of claim 18, wherein said substrate of PAPP-A is immobilized.

21. The method of claim 18, wherein said substrate of PAPP-A is IGFBP-4.

22. The method of claim 21, wherein said IGFBP-4 is tagged on its N-terminus or C-terminus.

23. A medical device for placement in a patient, said medical device comprising an agent that alters PAPP-A protease activity.

24. The medical device of claim 23, wherein said agent enhances PAPP-A protease activity.

25. The medical device of claim 23, wherein said agent inhibits PAPP-A protease activity.

26. The medical device of claim 23, wherein said medical device is impregnated with said agent.

27. The medical device of claim 23, wherein said medical device is coated with said agent.

28. The medical device of claim 23, wherein said inhibitor of PAPP-A protease activity is an antibody.

29. The medical device of claim 23, wherein said inhibitor of PAPP-A protease activity is a metalloprotease inhibitor.

30. The medical device of claim 29, wherein said metalloprotease inhibitor is 1,10-phenanthroline.

31. The medical device of claim 25, wherein said inhibitor is proMBP.

32. The medical device of claim 23, wherein said medical device is a stent for placement in a lumen of said patient.

33. A method for making a monoclonal antibody having specific binding affinity for PAPP-A, said method comprising:

- immunizing a host animal with a PAPP-A polypeptide to obtain antibody clones, wherein said PAPP-A polypeptide is free of pro-major basic protein; and
- selecting said monoclonal antibody having binding affinity for PAPP-A, but not for a PAPP-A pro-major basic protein complex.

34. A method for screening for a growth-inhibiting state in a non-pregnant patient, said method comprising:

- a) detecting a level of PAPP-A in a biological sample from said non-pregnant patient; and
- b) comparing said level of PAPP-A in said non-pregnant patient to a standard level of PAPP-A in non-pregnant patients, wherein a decrease in said level of PAPP-A in said non-pregnant patient indicates the presence of said growth-inhibiting state.

35. The method of claim 34, wherein said growth-inhibiting state is osteoporosis or cancer.

36. A method for detecting PAPP-A in a biological sample comprising contacting said biological sample with an antibody having specific binding affinity for PAPP-A, but not PAPP-A/pro major basic protein complex, to detect PAPP-A in said biological sample.

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